INSTRUCTIONS

-J05551 REV. 2012-06-29

COMBINATION SPEEDOMETER/TACHOMETER GAUGE KIT

GENERAL

is03400

U.S. Department of Transportation

National Highway Traffic Safety Administration

Title 49, United States Code, Subtitle VI. Motor Vehicle and Driver Programs,

Part C. Information, Standards, and Requirements,

Chapter 327. Odometers

Section 32703. Preventing tampering

A person may not —

(1) advertise for sale, sell, use, install, or have installed, a device that makes an odometer of a motor vehicle register a mileage different from the mileage the vehicle was driven, as registered by the odometer within the designed tolerance of the manufacturer of the odometer;

(2) disconnect, reset, alter, or have disconnected, reset, or altered, an odometer of a motor vehicle intending to change the mileage registered by the odometer;

(3) with intent to defraud, operate a motor vehicle on a street, road, or highway if the person knows that the odometer of the vehicle is disconnected or not operating; or

(4) conspire to violate this section or section 32704 \ or 32705 of this title.

Section 32704. Service, repair, and replacement

(a) Adjusting mileage. A person may service, repair, or replace an odometer of a motor vehicle if the mileage registered by the odometer remains the same as before the service, repair, or replacement. If the mileage cannot remain the same —

(1) the person shall adjust the odometer to read zero; and

(2) the owner of the vehicle or agent of the owner shall attach a written notice to the left door frame of the vehicle specifying the mileage before the service, repair, or replacement and the date of the service, repair, or replacement.

(b) Removing or altering notice. A person may not with intent to defraud, remove or alter a notice attached to a motor vehicle as required by this section.

Section 32705. Disclosure requirements on transfer of motor vehicles

(a) (1) Disclosure requirements. Under regulations prescribed by the Secretary of Transportation that include the way in which information is disclosed and retained under this section, a person.transferring ownership of a motor vehicle shall give the transferee the following written disclosure:

(A) Disclosure of the cumulative mileage registered on the odometer.

(B) Disclosure that the actual mileage is unknown if the transferor knows that the odometer reading is different from the number of miles the vehicle has actually traveled.

(2) A person transferring ownership of a motor vehicle may not violate a regulation prescribed under this section or give a false statement to the transferee in making the disclosure required by such a regulation.

(3) A person acquiring a motor vehicle for resale may not accept a written disclosure under this section unless it is complete.

(4)

(A) This subsection shall apply to all transfers of motor vehicles (unless otherwise exempted by the Secretary by regulation), except in the case of transfers of new motor vehicles from a vehicle manufacturer jointly to a dealer and a person engaged in the business of renting or leasing vehicles for a period of 30 days or less.

(B) For purposes of subparagraph (A), the term “new motor vehicle” means any motor vehicle driven with no more than the limited use necessary in moving, transporting, or road testing such a vehicle prior to delivery from the vehicle manufacturer to a dealer, but in no event shall the odometer reading of such vehicle exceed 300 miles.

(5) The Secretary may exempt such classes or categories of vehicles as the Secretary deems appropriate from these requirements. Until such time as the Secretary amends or modifies the regulations set forth in 49 CFR 580.6, such regulations shall have full force and effect.

Figure 1. Title 49, United States Code

Many Harley-Davidson® Parts & Accessories are made of plastics and metals which can be recycled. Please dispose of materials responsibly.

Table 1. Speedometer Features Available

Models	Features					
	Gear Indicator	Trip B	Fuel Level	Range	Clock	Colored Backlighting
Sportster®						
2004-2006	-	Yes[1]	-	-	Yes[1]	Yes[1]
2007	-	Yes	Yes[1 2]	Yes[1 2]	Yes	Yes[1 2]
2008 and Later	Yes[1]	Yes	Yes[1 2]	Yes[1 2]	Yes	Yes[1]
Dyna®						
2004-2007	-	Yes[1]	Yes[1]	-	Yes[1]	Yes[1]
2008	Yes[1]	Yes	Yes[1]	-	Yes	Yes[1]
2009-2011	Yes[1]	Yes	Yes[1]	Yes	Yes	Yes[1]
Softail®						
2008-2010	Yes[1]	Yes	Yes[1]	Yes	Yes	Yes[1]

Notes:
[1] New functionality
[2] Feature available with the separate purchase of Fuel Sensor kit (part no. 61200008)

Kit Number

70900274

Models

For model fitment information, see the P&A Retail Catalog or the Parts and Accessories section of www.harley-davidson.com (English only).

Additional Parts Required

To enable fuel level and fuel range functionality, Sportster® models require separate purchase of Fuel Sensor kit (part no. 61200008). If fuel sensor kit is not installed, 2007 Sportster models require separate purchase of Fuel Sender Resistor kit (part no. 72545-08).

The Sportster® Fuel Sensor kit (part no. 61200008) is not compatible with Sportster® Fuel Gauge kits (part no. 75031-09 and 75338-09). The motorcycle cannot support multiple electrical fuel gauges. If Fuel Gauge kit (part no. 75031-09 or 75338-09) is equipped, it must be disabled or the Fuel Sensor kit (part no. 61200008) cannot be installed and the fuel function of this speedometer kit will not function.

⚠WARNING

The rider's safety depends upon the correct installation of this kit. Use the appropriate service manual procedures. If the procedure is not within your capabilities or you do not have the correct tools, have a Harley-Davidson dealer perform the installation. Improper installation of this kit could result in death or serious injury. (00333a)

NOTE

This instruction sheet refers to service manual information. A service manual for this year/model motorcycle is required for this installation and is available from a Harley-Davidson dealer.

Kit Contents

For vehicles equipped with security sirens, confirm that the Hands Free FOB is present.

This kit contains a combination speedometer/tachometer and an adapter harness. There are no service parts available with this kit.

COPY ODOMETER DATA

NOTES

The gauge will display NO CAL (no calibration) and will not function if it is installed before the odometer copying process is performed.

Sportster® models require the installation of fuel sensor kit (part no. 61200008) prior to connecting power to the gauge. Follow the instructions included in that kit.

1. Verify that the engine off/run switch is in the RUN position.
2. Turn the ignition switch to the ACCY position and note the odometer reading.
3. Turn the ignition switch to the OFF position.
4. See the service manual and Figure 2. Locate data link connector [91] (2).
5. Remove the rubber plug (1) from the data link connector [91] and install the 4-way connector (3) of the adapter harness from the kit.
6. Install the 12-way connector (4) of the adapter harness to the new gauge (5). Hold the gauge during the copying process.

NOTE

If odometer copy process is done repeatedly in a short time span, it will not display the percentage countdown, CHECK, and OK. Refer to Troubleshooting Guide (Table 3).

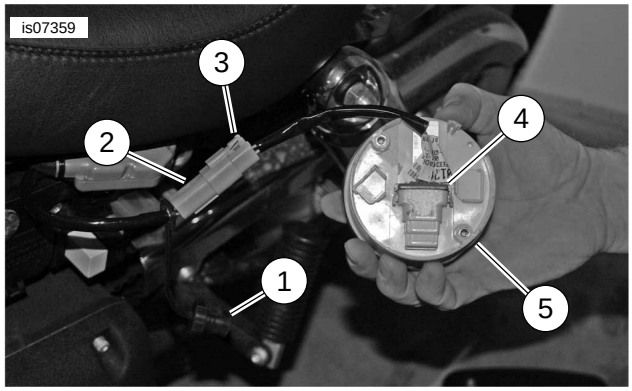
The display may be difficult to read in low light conditions.

7. Turn the ignition switch to the IGN position.

   The gauge will rapidly display the percentage of copying complete. Then the gauge will display CHECK and finally OK. When OK displays, the copying process is successful.

8. Turn the ignition switch to the OFF position.

9. Disconnect the adapter harness from the data link connector [91] and the gauge. Install rubber plug.



1. **Rubber plug**
2. **Data Link Connector [91]**
3. **4-Way adapter harness connector**
4. **12-Way adapter harness connector**
5. **Speedometer**

Figure 2. Connect Speedometer to Copy Odometer Data

Figure 3. Speedometer Gauge Displaying "OK"

REMOVAL

⚠WARNING

To prevent accidental vehicle start-up, which could cause death or serious injury, remove main fuse before proceeding. (00251b)

Refer to the service manual and follow instructions to remove the main fuse.

NOTE

Cover the fuel tank with an H-D Service Cover or clean shop towel to prevent scratching the finish.

Models with Speedometer Mounted Flush to Console

Follow service manual instructions to remove the old speedometer.

Models with Speedometer Mounted Upright on Console

- Follow service manual instructions to remove the seat and instrument console.
- Follow instructions in the service manual to remove the old speedometer.

Models with Speedometer Mounted at the Handlebar

Follow service manual instructions to remove the speedometer housing from the upper fork bracket, and remove the old speedometer from the housing.

INSTALLATION AND FINAL CHECK

NOTES

Apply window cleaning fluid or mild soapy water to the speedometer gasket as needed to aid installation.

Rotate the gauge into approximate visual alignment before fastening in place.

Follow instructions in the service manual to install the new speedometer.

NOTE

*Confirm that the ignition key switch is in the **OFF** position before installing the main fuse.*

⚠WARNING

After installing seat, pull upward on seat to be sure it is locked in position. While riding, a loose seat can shift causing loss of control, which could result in death or serious injury. (00070b)

NOTE

When the main fuse is installed and battery power is applied to the electrical system, the security light will flash for up to 15 seconds, while the new gauge synchronizes to the ECM.

1. See the service manual and install the main fuse seat.

⚠WARNING

Be sure headlamp, tail and stop lamp and turn signals are operating properly before riding. Poor visibility of rider to other motorists can result in death or serious injury. (00478b)

2. Turn the ignition/key switch to IGN, but do not start the motorcycle. Test for proper turn signal, brake light and tail light operation.

3. Check the speedometer and tachometer for proper operation and verify that the odometer reading is correct.

NOTES

- *The replacement speedometer will become locked to the ECM after 31.1 miles (50km) have been accumulated. The trip B odometer will display the countdown mileage. Once the countdown reaches zero, the speedometer is locked to the ECM. If installed on another vehicle the odometer will display "VIN ERR". If the speedometer is removed from the vehicle before the countdown reaches zero, it has not been locked to the ECM. This mileage*

countdown allows for a road test to verify that speedometer replacement was the proper repair.

- *During the 31.1 miles (50 km) countdown period (before the speedometer is locked to the ECM), the security light will flash for up to 15 seconds when battery power is restored to the electrical system, while the new gauge synchronizes to the ECM.*
- *Gear Indication display is a calculated gear position based on wheel and engine speed. The gear position displayed may be momentarily inaccurate depending on rider clutch use characteristics and clutch wear. This momentary false reading, although unlikely, can occur if the clutch is allowed to slip either due to excessive wear, poorly adjusted clutch or if the operator rides the clutch.*
- *Model year 2007 and earlier vehicles will NOT have gear indication.*

Battery Reconnection and Initialization

After the battery is reconnected or a new gauge is installed, the gauge requires about a half tank of fuel to properly initialize fuel range (miles to empty) functionality.

During consumption of the first full tank of fuel, the gauge software will begin the process of learning your riding patterns, eventually tailoring the fuel range calculations to your unique riding characteristics.

The fuel level display and tank mounted fuel gauge may not match at all times when starting with a full tank of fuel. The tank fuel gauge utilizes a continuous sweep needle to indicate fuel level, while the speedo/tach fuel level utilizes a segmented display. Each segment represents 1/4 of a tank. For example; if a given segment just came on or is about to go off, it would show no change, while the needle on the tank mounted gauge would likely show a change in position.

Fuel Fill-Up and Top-Off

NOTE

Sportster® models require Fuel Sensor Kit (part no. 61200008) for fuel level functionality. Also, see FUEL LEVEL DISPLAY (SPORTSTER) to select the fuel tank's size.

When adding fuel to the vehicle it is recommended you add at least 2 gallons (1 gallon for 2.1 gallon Sportster® tank) of fuel to update the fuel and range displays. If the fuel display does not update immediately after the vehicle is put in motion the fuel and range displays will slowly update over the next 30 miles.

Press and hold the "Trip" reset switch to toggle between the "mile" and "kilo" displays.

DISPLAY MODIFICATION

The backlight color can be modified for the entire gauge or the dial, tachometer pointer, and display separately. The gear indication and fuel level display can also be disabled.

Fuel Level Display (All Models Except Sportster)

1. Press and hold the trip reset button and then turn the ignition switch to the accessory (ACCY) position. Then release the trip reset button. The gauge will display "SETUP" and show the fuel level display.
2. Turn the ignition switch quickly to OFF and then back to ACCY to toggle the fuel level display from ON to OFF.

NOTE

Ignition switches will vary on different vehicles. Some will have ignition (IGN) between OFF and accessory (ACC). In those cases, the switch should quickly switch from ACC to IGN and then back to ACC with the same result.

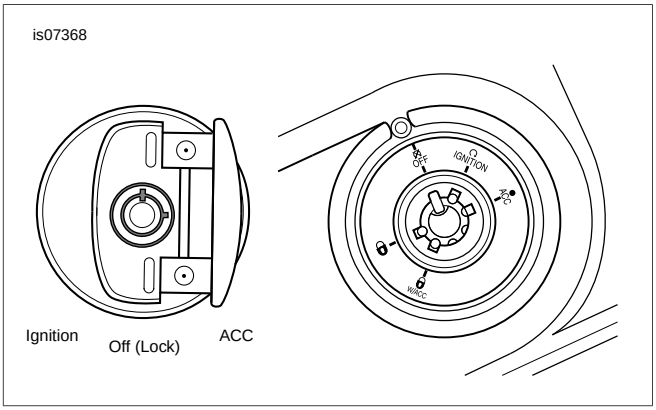


Figure 4. Ignition Switches

3. Press the trip reset button toggle to the next display control **or** turn the ignition switch to OFF or IGN to return to normal operation and save the setting.

Figure 5. Fuel Level Display Setup

Figure 6. Select Fuel Tank Size (Sportster Models Only)

Fuel Level Display (Sportster)

1. Press and hold the trip reset button and then turn the ignition switch to the accessory (ACCY) position. Then release the trip reset button. The gauge will display "SETUP" and show the fuel level display and flash "on".

2. See Figure 6. Turn the ignition switch quickly to OFF and then back to ACCY to toggle the fuel level display from ON to the correct tank size (2.1 gal, 3.3 gal or 4.5 gal). See owner's manual for correct tank size.

3. Press the trip reset button to toggle to the next display control **or** turn the ignition switch to OFF or IGN to return to normal operation and save the setting.

Gear Indicator Display

1. Press and hold the trip reset button and then turn the ignition switch to the accessory (ACCY) position. Then release the trip reset button. The gauge will display "SETUP" and show the gear indicator display.

NOTE

Number "8" is a setup indicator only. Transmission has 5 or 6 speeds depending on vehicle and model year.

2. Toggle to gear indication by pressing the trip switch; "8" will be displayed at the top right, with "ON" or "OFF" flashing. If "ON" is flashing, the gear indication display is enabled (gears "1" through "5" or "6" will display as appropriate when the vehicle is in motion).

3. Turn the ignition switch quickly to OFF and then back to ACCY to toggle the gear indicator display from ON to OFF.

4. Press the trip reset button and toggle to the next display control **or** turn the ignition switch to OFF or IGN to return to normal operation and save the setting.

Backlight Brightness

NOTE

This speedometer is equipped with a photocell sensor that will sense daytime and nighttime modes. When travelling under bridges or in tunnels the photocell sensor will sense nighttime mode and enable the backlight within a few seconds.

1. Press and hold the trip reset button and then turn the ignition switch to the accessory (ACCY) position. Then release the trip reset button. The gauge will display "SETUP" and show the fuel level display flashing.

2. Press the trip reset button to toggle through different displays until the brightness function is selected. The gauge will display SETUP BRIGHT.

3. Turn the ignition switch quickly to OFF and then back to ACCY to toggle between BRIGHT and DIM settings.

4. Press the trip reset button and toggle to the next display control **or** turn the ignition switch to OFF or IGN to return to normal operation and save the setting.

Display Color

NOTE

- *This speedometer is equipped with a black backlit LCD with color selectable back lighting. In daytime lighting conditions with direct or indirect sunlight, the contrast of the LCD display will vary depending on the backlight color selected. The display contrast affects the visibility of the display. In direct sunlight, color number 600 maximizes display contrast and visibility. See Table 2.*
- *This speedometer is equipped with a photocell sensor that will sense daytime and nighttime modes. When travelling under bridges or in tunnels the photocell sensor will sense nighttime mode and enable the backlight within a few seconds.*
- *It is recommended that the color display not be adjusted in direct sunlight.*

Figure 7. Select Display Color

Table 2. Color Guide

Number	Range Color
000-015	Red
016-030	Amber (Orange)
031-060	Yellow
061-100	Yellow/Green
101-180	Green
181-250	Green/Blue
251-350	Blue
351-380	Blue/Violet
381-440	Violet
441-490	Pink
491-525	Red
526-600	White/Light Colors
Note: Color descriptions and color ranges are approximate.	

The backlight color can be modified for the entire gauge or the dial, tachometer pointer, and display separately.

1. Press and hold the trip reset button and then turn the ignition switch to the accessory (ACCY) position. Then release the trip reset button. The gauge will display "SETUP" and show the fuel level display.

2. Press the trip reset button to toggle through different displays until the a display color function is selected. The gauge will display COLOR ALL (changes all display colors at once), DIAL (changes backlight color for tachometer), LCD (changes backlight color for LCD display), or TACH (changes tachometer needle color).

3. See Figure 7. Turn the ignition switch quickly to OFF and then back to ACCY. The gauge will display the color number of the current color.

4. See Table 2. Press and hold the trip reset button to **quickly** cycle through the colors. Release the trip reset button to stop cycling through the colors.

   or

   Press and release the trip reset button repeatedly to **slowly** cycle through the colors.

5. Turn the ignition switch quickly to OFF and then back to ACCY to save the color. The gauge will display SAVED and then return to the display color select menu.

6. Turn the ignition switch to OFF or IGN to return to normal operation.

Clock Adjustment

1. To adjust clock on gauge toggle to the clock in the display.

2. Press and hold trip and choose between 12-hour or 24-hour clock by pressing and holding trip

3. The hours will then flash. Press trip switch quickly to current hour then press and hold trip switch.

4. The minutes will then flash. Press trip switch quickly to current minute then press and hold trip switch.

5. The AM or PM will then flash. Choose correct one then press and hold.

Table 3. Troubleshooting

Operation	Problem	Possible Cause	Possible Solution
Copying odometer data	Gauge does not display percentage, "check", and "ok".	Gauge has already conducted odometer copy process or the gauge might not have power.	Install gauge and confirm functionality.
Copying odometer data	Gauge does not display percentage, "check", and "ok".	Vehicle ignition switch not in "ign" position.	Turn to "ign".
Copying odometer data	Gauge does not display percentage, "check", and "ok".	Vehicle run/stop switch not in "run" position.	Turn to "run".
Copying odometer data	Gauge starts percentage but does not complete.	Gauge lost comunication to vehicle bus (electrical system) or gauge not compatible with vehicle (incorrect fitment or model year).	Turn vehicle ignition switch to "off" and run/stop switch to "stop", wait 15 seconds, and retry.
Copying odometer data	Gauge reads "no cal" or vin err" before starting countdown.	Normal software functionality.	None needed. Confirm that the gauge displays percentage, "check" and "ok." The gauge is functioning properly.
Installation into vehicle harness	LCD states "no cal".	Gauge did not conduct copy odometer process.	Conduct copy odometer process in i-sheet.
Installation into vehicle harness	LCD states "vin err".	Gauge was already "married" (accumulated 31.1 miles (50 km)) to another vehicle.	Reinstall on previous vehicle to confirm no "vin err".
Entering set up mode	Will not go to set up mode.	Loose connection with gauge connector or trip reset button.	Check for bent accessory pin #6 in gauge connector or check trip reset button operation.
Gear Indication	Gear Indication does not operate.	Not turned on.	Use instruction sheet to turn on gear indication in set up mode.
Gear Indication	Gear Indication does not operate.	Vehicle is 2007 or earlier.	N/A
Fuel Level	Fuel Level does not operate.	Not turned on in set up mode.	Use instruction sheet to turn on fuel level in set up mode.
Fuel Level	Fuel Level does not operate.	If Sportster check for proper install of fuel sender.	Use instruction sheet for proper install.
Color Changing	Color will not save.	Color was not saved properly.	Use instruction sheet for proper saving procedure.
Range functionality	Range for XL states "r----".	Tank size not set up.	Go into set up mode and select tank size.
Note: Please contact Technical Service with any installation or troubleshooting questions before filing a warranty claim.			